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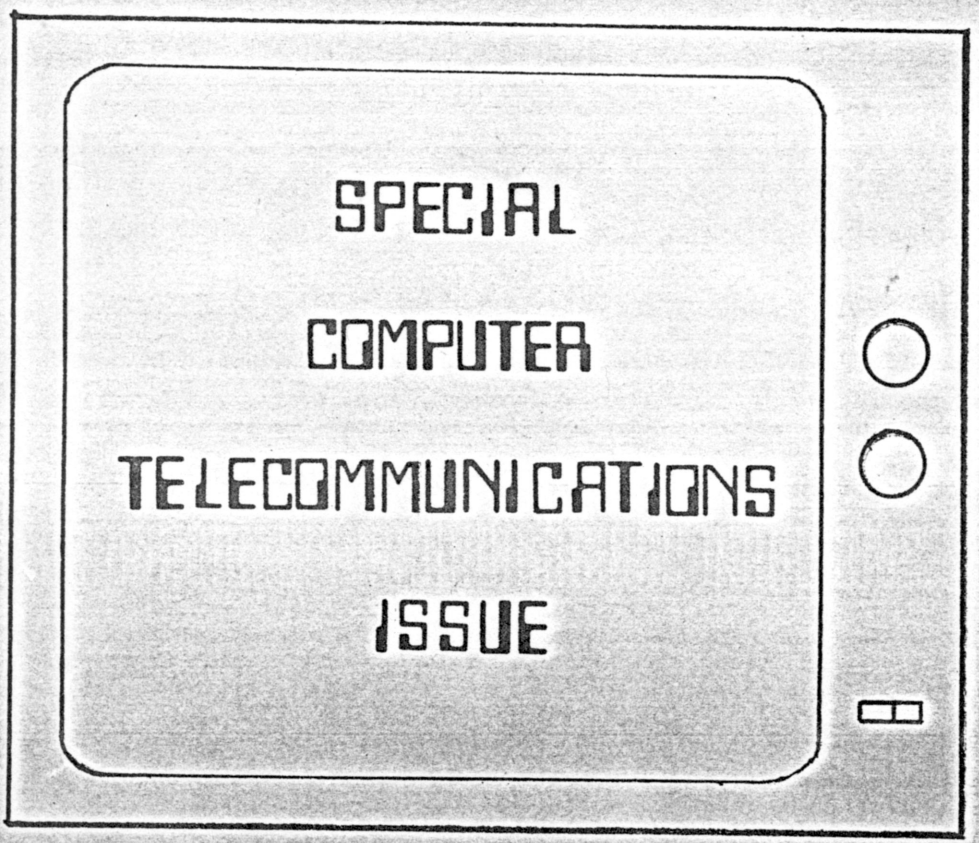
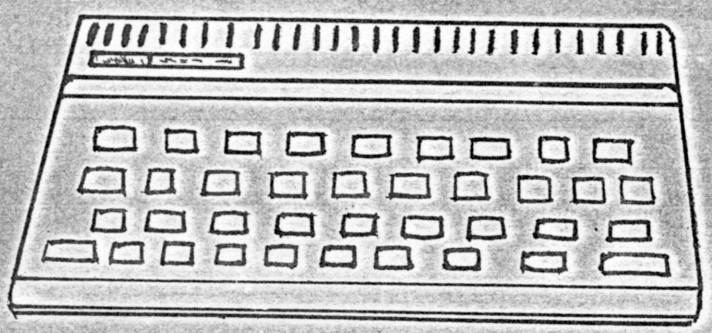
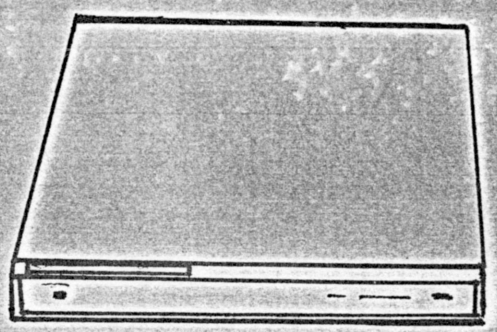
Time Designs™

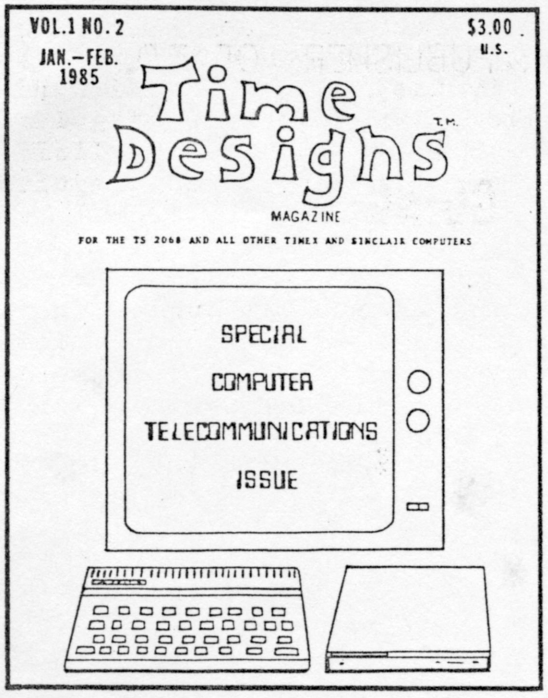
MAGAZINE

FOR THE TS 2068 AND ALL OTHER TIMEX AND SINCLAIR COMPUTERS









Editor/Publisher:Tim Woods

Assistant to the Editor:Stephanie Woods

Software Reviews, Special Assignments, and Photography:Tom Judd

Special Contributor:Dennis Jurries

Consultant:M.J. Marsh

Special thanks for the kind words of encouragement from the CCATS and PATS user groups in Oregon.

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AN INTERVIEW WITH THE EDITOR/PUBLISHER OF T.D.M.

"WHERE ARE WE GOING?"

NOTE: We have received a good deal of correspondence lately, concerning the direction that TIME DESIGNS MAGAZINE is going, also our views on the stability of the Timex and Sinclair computer market that remains, and our long range goals. The staff decided to interview the Editor/ Publisher of our magazine, Tim Woods, who has more or less been the brain-child of our operations. This is an attempt to clarify several issues that have developed from questions by our readers. The regular "EDITOR-IAL" column that is usually featured in this section, will return next issue in its normal format.

Time Designs Staff: What led you to publish a Timex/Sinclair magazine, especially when the situation appeared to be rather bleak after the Timex announcement?

Tim Woods: It was shortly after that bad news that I began to wonder how long it would be until the companies that had gambled large investments in the Timex/Sinclair after-market, would drop out. And I included the big full color gloss magazines like SYNC and TIMEX/SINCLAIR USER. Lucky for TIMEX/SINCLAIR USER, they had just sold their magazine to another outfit before Timex dropped the bomb. The new owner struggled along for several months, claiming to soon publish an issue, but never did. As for SYNC, they just had too much overhead. With so many big advertising accounts dropping out, they called it quits. It was at that time, I saw a real need for TS users to continue to have a quality magazine. I knew that a costly publication like SYNC wasn't feasible, but a more budget-minded magazine, still maintaining all of the standard features.

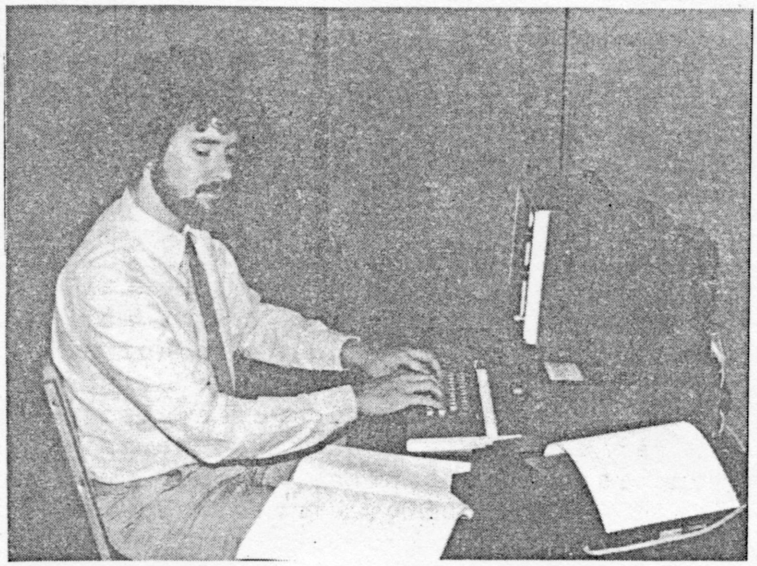
T.D.S.: Aren't there still some other TS magazines out there?

T.W.: Yes there are. And some good ones too. SYNTAX has been around for a long time. Its published by the Harvard Group and is quite expensive. I believe that they are up to $48 for a years subscription! They are essentially a newsletter format, but each issue is packed with a lot of information and usually the very latest news. There is TS HORIZONS which is a newer magazine with a smaller-than-usual size for a magazine, but seems to be very informative and feature packed. There is also SYNCWARE NEWS. It is edited by Thomas Woods, who has gained a reputation for his excellent software. His magazine is quite technical in content, and may be hard to comprehend by newer TS users, but never the less, is a very good publication. Also the all-program newsletter "BASIC" is still available the last time I heard. In my opinion, I think the best magazines for your money are the British Sinclair publications like ZX COMPUTING, if you can get them in your area. They are simply excellent, just crammed with feature articles and programs.

T.D.S.: Do we detect that you don't like magazines that are overly technical?

T.W.: No, that is not true. Its just that I don't feel a computer magazine should be devoted entirely to a "machine!" I feel that there is a humanistic aspect of being a computer user also. Don't get me wrong, I really enjoy reading the latest programming tricks and construction project articles just like the next guy. But I feel its nice to have somewhat of a people-orientated magazine also. Lets just say, borrowing the term, "user friendly".

T.D.S.: How long do you plan on publishing Time Designs Magazine?
T.W.: I get asked that quite often, especially by readers who are considering a subscription to the magazine. I must say that we will continue to print a magazine as long as there is interest in Timex and Sinclair computers. I know for sure we will be in business at least this year and most likely the one after that. After that, who knows? Maybe till the end of the 80's.
T.D.S.: Do you think the same thing could happen to your magazine that happened to SYNC and TIMEX/SINCLAIR USER?
T.W.: No. Definitely not. For one thing we haven't invested a fortune in our product right from the start. We are not full color, gloss and over 70 pages thick. What we want to do is grow gradually, and not put everything on the line from the start. Sure, someday soon we may have a color cover, and each issue we plan on adding some more pages. But we don't want to make ourselves vulnerable, just flexible.
T.D.S.: How successful was your first issue?
T.W.: I was rather pleased. Although it took a few more months to get it out than we expected. We received some nice letters congradulating us on our efforts, and some objective suggestions for some new features that we will incorporate in future issues. I see room for improvement, and we will do just that with each consecutive issue. As far as sales, I thought we did exceedingly well for a first issue.
T.D.S.: What do you think you can achieve for a readership circulation?
T.W.: I think the key to that question is attempting to reach the more than two million TS users in the U.S. Just the other day someone overheard me in a discussion on TS computers, and spoke up and said, "you mean you really use those little things,... I've had one around for sometime, but never figured out how to put the darn thing to use." It just goes to show you, that there are a lot of people out there who would like to learn more about their computers. I think that TS user groups are great, but they have not reached the entire public. There are a lot of new users out there to recruit. To get back to your question, I would like to see our humble little magazine reach 1,000 subscribers by sometime this year. The big magazines that are now defunct, claimed to have at one time hundreds of thousands of subscribers.
T.D.S.: Are you a magazine primarily for the TS 2068?
T.W.: When we first started out, this was in our plans. At least to have a heavy emphasis on that machine. It was a computer that was just dumped on the public shortly before its parent company split for good. The published information on the TS 2068 was very sparse. However, now that we have received many requests for support of the TS 1000/ZX81, we won't short-change this fine machine either. We want to also feature Sinclair's QL and Spectrum, and any other computer that Sinclair has made or will introduce in the future. And of course the TS 2068 will be right at the top too.
T.D.S.: Tell us some of your future plans for the magazine.



Editor/Publisher Tim Woods of Time Designs Magazine

The M-Script Word Processor package is available from 21st Century Electronics, 6813 Polk Street, Guttenberg, NJ, 07093. M-Script is also a word processor that has been available for other personal computers from IBM and Radio Shack. The reason why there is a version available for the TS 2068, has to explain that it was up for Timex's approval. M-Script is a very comprehensive word processor, and includes a 72 page manual.

For $300 for the MT Spirit, and $70 for the M-Script, you could own a genuine Timex. Well, sort of.

TS 2068 PRODUCTS FOR EXPERIMENTERS FROM THE JOHN OLIGER COMPANY

The JOHN OLIGER COMPANY is offering several experimenter boards for the Timex/Sinclair 2068. They include a User Cartridge Board, with empty sockets for eproms (2 2764s or 2 27128s), an Expansion Board, complete with an RGB monitor interface circuit and a feedthrough rear edge connector, and the just recently announced 2068 Eprom Programmer. While the User Cartridge Board utilizes the cartridge slot in the side compartment of the TS 2068, the Expansion Board plugs into the rear edge connector. Other boards like the 2068 Eprom Programmer (and ones that will be released in the future) plug into the Expansion Board. The Eprom Programmer also requires the optional Vpp Power Supply Board, or similar power supply.

All of the John Oliger Co. products are available as a bare printed circuit board (you supply the parts), or as a kit with parts, and also fully assembled and tested. The instructions for the kits are fairly limited (includes a schematic) and are most likely not designed for the first time kit builder.

Also to be available soon, is a Centronics type parallel printer interface board for the TS 2068. There are also some experimenter boards available for the TS 1000/ ZX81.

For further information on the boards, and a current price list, please send a S.A.S.E. to: The John Oliger Co., 11601 Whidbey Dr., Cumberland, IN, 46229.

ERRATA

It was reported in our Nov./ Dec. 1984 issue that we would be featuring the articles "A Flight Instructor Reviews The Timex Flight Simulator Cartridge Software", and "How To Make Music With The TS 2068 Part Two", in our current issue. We are still in the process of completing these two features, and will most likely have them available in our March/April 1985 issue of Time Designs Magazine. We apologize to everyone for this inconvenience. However, we did manage to come up with some nice articles to take their place. We hope you will agree.

UPCOMING
IN OUR NEXT ISSUE

*Directory of TS User Groups in the U.S.and Canada.

*6 (yes six!) reviews of software for the 48k ZX Spectrum.

*How to order software and peripherals from overseas.

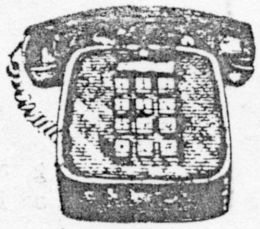
*A Machine Code routine by Dennis Jurries.

*How to repair ribbon connectors.

*An introduction to Sinclair BASIC.

*The latest TS news, user written programs and much more in store for you!

TELCOMMUNICATIONS



COMPARING THE DATA BASE SERVICES

Justifying the need for a personal home computer has been a problem for many a prospective buyer. Tv commercials haven't helped one bit either, with their guilt-ridden ads telling parents that their little one is going to be a failure if they don't indulge. And it isn't certain that keeping ones financial records and checkbook on a cassette tape is more convenient. Arcade and adventure games are interesting, but really only passing thrills.

A telecommunications modem can bring many things into perspective. The almost infinite supply of information and specialty services available to the home computer buyer, is probably the best reason for someone to own a microcomputer. And you don't need spendy Apple and IBM machines to retrieve all of the information and services. A Timex/Sinclair works just fine. Either TS 2068 or TS 1000, it doesn't matter. All you need is a computer, a compatible modem, some special software, and a telephone line to connect into.

Have you ever wanted to book your own airline reservation? How about your own investment service right there in your home? Send a letter to a friend via electronic mail. How about an instant movie or restaurant guide? Want to read any current major magazine or newspaper? Go "on-line" with another TS user and have a chat, or leave messages on an electronic bulletin board. All of this (plus a whole lot more) can be obtained by a home computer and modem, using commercial data base services.

A data base is essentially a pooling of information from a wide variety of sources, or individual bases. One commercial data base may have hundreds of seperate data bases under its wing. Usually the information is stored and sorted in large main frame computers. When a service is dialed, one computer converses with the other. In fact, when using the commercial services, it is like having your own private remote terminal.

There are quite a few commercial data base services available. New ones are cropping up on a regular basis. Most computer owners choose just one major service, one that best suits individual needs. Sometimes receiving a coupon with a brand new modem for free membership or "on-line" time, is the only influencing factor, that prompts someone to select a particular service. There are some differences among the commercial services. Prices can vary for the on-line rates, and is usually billed for every minute that you use. Some services charge for an initial fee or membership. There are sometimes, a user manual to be purchased, or it might be included free. Contents of the data base service can be widely different also. Some are more orientated towards business, some for entertainment, others are general interest. Ther is even one that has some features specifically for Timex/Sinclair users.

Before going on-line, a password and an identification number must be acquired and typed in. Different data base services have their own method of logging on. A telephone number of the service in your area must also be secured. This could be a real problem if you live in a rural area, or one that is not close to a major metropolitain area serviced by the data base. A phone bill for just one session could bankrupt such a user. Some of the larger services have available special phone lines that have been leased from telephone companies to provide their customers with a type of volume discount. This could help quite a bit, and should be in-

vestigated.

One other thing needs to be taken into consideration. Adjusting the modem's parameters to be compatible with the host services computer. Parity, duplex, stop bits, and word length should all be set properly. This information can be obtained by contacting the data base directly.

In the following section, is a brief review of a few of the more popular data base services. It is by no means a complete list of all the offerings a user has. Included are general features, costs, and an address and toll free phone number where the service can be reached for further information.

COMPUSERVE: This is perhaps the largest and the oldest service available. It includes everything from comparing new automobiles, weather forecasts for your city, and playing text adventure games with other computer users. One rather pleasant suprise is that Compuserve offers some special services exclusively for TS users. This particular service has no listing in the main or sub-menus, but is included in the "Computers and Electronics Magazine Special Interest Group" section (CEM SIG). After logging onto Compuserve, print "GO CEM 450" and enter. Once in, there are bulletin and message boards, and on-line live conferences in progress. On Wednesday evenings (7:00P.M. PDT) are held special nation-wide conferences. Usually there is a quantity of information being exchanged on TS hard and software, technical advice, and sometimes just plain rumour. Occaisonally, TS after-market dealers will get together and converse. One other area of the CEM SIG that benefits TS users, is the XA data base (section 4). Here one can download programs stored in the data base memory, providing that your modem's software is capable. With all of the standard features like electronic home shopping and up to the minute stock exchange reports, coupled with the TS section (CEM 450), Compuserve is certainly hard to beat. Cost: One time fee which includes the starter pack (three-ringed binder, manual, ID number and password, and three free hours of use in a sealed envelope) for $40. Compuserve starter pack can be purchased direct or from most larger computer retail stores. Hourly rates are $12 during peak periods, $6 for off hours.

Compuserve
500 Arlington Center Blvd.
Columbus, OH 43220
(800) 848-8199

THE SOURCE: The Source is a subsidary of the Readers Digest Assn., who are known traditionally for their quality services and products. The Source organization is also committed to offering the computer/modem user a large, sophisticated commercial data base of noted quality. Just to name a few, services include a 24 hour investment "center" by Spear Securities, "Sourcemail" electronic mail service, an airline guide, storage of files and data, and all the news and sports. Actually, Compuserve and The Source compare quite closely with information and telecommunication services. The Source however, does not have a Timex/Sinclair special interest group. There are interest groups for just about every other home computer though. Costs: $100 one time membership fee. To join, contact The Source directly. The Source users manual is an aditional $20. Hourly rates for prime time are $20.75, off hours are $7.75. There is also a monthly minimum of $10.

The Source
1616 Anderson Rd.
McLean, VA 22102
(800) 336-3366

DELPHI: The Delphi data base contains a variety of useful services, but on a somewhat smaller scale than say Compuserve. Offerings include a 20,000 entry encyclopedia, consumer information, financial advice and services, a professional advisory service for personal relationships, and others. Delphi plans to add many more features in the coming year ahead. Costs: Initial fee of $50 which includes a membership package and handbook. Hourly rates are $16 during business hours, $6 off hours.

Delphi
3 Blackstone St.
Cambridge, MA 02139
(800) 544-4005

DIALOG and THE KNOWLEDGE INDEX: From the Silicon Valley, Calif. come the two huge data base/info services that are a subsidary of the Lockheed Corp. The Dialog information retrieval system is more geared to business and professional laypersons. It includes more than 100 million seperate entries, derived from books, magazines, newspapers, journals and directories. Subjects cover all areas of science, technology, business, medicine, current affairs, social sciences and humanities. Due to the complexity of Dialogs data bases, special training sessions are scheduled frequently for all skill levels of the users. The Knowledge Index on the other hand is the information service for home computer users. The service is only available during the off hours, and makes use of many of the data bases contained in Dialog, plus several others of interest to the general public. Costs: For Dialog, there is no initial fee, but hourly charges range from $10 to $100 or more, depending on the specific area being searched. For The Knowledge Index, there is a $35 initial fee which includes a users manual. Hourly rates are $24 (off hours).

Dialog/Knowledge Index
3460 Hillview Ave.
Palo Alto, CA 94304
(800) 227-1927 (for Dialog)
(800) 227-5510 (for K.I.)

NEWSNET: Here is another business related information retrieval service with implications for personal home computer use. NewsNet is just that, a network of news storing data bases. Over 200 publications. Also, news "flashes" and wire services from UPI are featured. NewsNet has a very user friendly menu-select feature. Costs: There is no initial fee. Hourly rates are $24, with a $15 per month minimum. Some individual bases have sur-charges.

NewsNet
945 Haverford Rd.
Bryn Mawr, PA 19010
(800) 345-1301

T/S BBS

Almost as popular (if not more) as the commercial data base services, are the privately operated data bases or bulletin board services (BBS). Most BBS are run by computer hobbyists with systems on a small scale. Most systems are simply a microcomputer, a modem, a floppy-disk drive, and some appropriate software (available commercially), sometimes written entirely in BASIC. The number of BBS are growing at an outstanding rate, so much so that a few publications have taken over the job of trying to list such BBS nationwide. The good news is that just about everyone is free, and most likely there is one operating in your area.

BBS interests range in many different areas, from adventure game enthusiasts to chess clubs, and many seperate microcomputer groups. Individual BBS may contain different services. For example, a computer club may have on-going equipment swapping, question and answer clinics, mail and messages service, and programs for down-loading.

Timex/Sinclair related BBS have taken a slow start, but a few have emerged, and plans for others are underway. We have included a listing of TS BBS that we know of, and there might be some others out there. All it takes is a phone call to open the door to a brand new source of information and ideas for your TS computer. Please take into consideration the one rule that is common with all BBS: be courteous, and no obusive language.

Zebra Systems BBS Woodhaven, NY	(718) 296-2229
River Cities Smart BBS Paden City, WV	(304) 652-1416
Pheonix BBS Dover, DE	(302) 734-0179
ONLINE BBS Atlanta, GA	1 (800) 438-2438
INTERCOMEX Denver, CO	(303) 367-1935

This list will be up-dated in future issues.

T/S MODEMS

The heart of all computer telecommunications is the modem. Modem stands for MOdulate/DEModulate. It works over the telephone line by sending special tones that are assigned to each 0 and 1 information bit (modulate), and a receiving modem converts the tones back to the original bits (demodulate). A hook up to the telephone line can be accomplished with two different designs. Either direct or acoustically (which is simply cradling the actual telephone handset in a sensitive pick-up device). The direct method is by far the preferred design, and all Timex/Sinclair compatible modems are direct connected.

The Timex/Sinclair 1000 has for several years now had the opportunity to utilize the benefits of telecommunications, thanks to the efforts of the Byte-Back Company in Leesville, South Carolina. Their "MD" modem line has been available in both kit and fully assembled and tested forms. One unique feature all of their modems have, is a RS-232 port, which allows for the connection of a full size printer. This feature alone adds fine value to an already exceptional product. Today the Byte-Back Co. has upgraded the MD-2 modem to operate on the TS 2068. It is called the MD-68, and sells for $120 as a kit, and $150 fully assembled.

The Timex Computer Corporation had plans for a modem all their own. One that would be compatible with the TS 1000/1500 and the TS 2068. In fact, it was once said that the TS 2068 was designed around the idea of personal computer telecommunications. But pipe dreams suddenly faded when Timex pulled the plug on their computer line. All was not lost though. Westridge Communications, the company that Timex had contracted to produce their modem, decided to go ahead and release it under their name instead. Thus, the Westridge TS 2050 was finally born. The TS 2050 retails for $120.

If a modem is the heart of computer telecommunication, then the software that operates it is the brain of the modem. Most modem software is considered to be "smart" or intelligent. That is, it can perform several different operations and functions. Examples can include automatically dialing a phone number from the keyboard, auto-answer incoming calls from another terminal, printing capabilities off the screen, and even file storage of phone numbers and log-on data. Some sophisticated software like Byte-Back Co's ZCOMM for the MD-68 and Westridge's optional MTERM II for the TS 2050, can up-load or down-load information into a buffer for use later on. This feature is especially valuable for sending pre-prepared texts or obtaining files and programs from a data base.

Timex/Sinclair enthusiasts might have another option when contemplating a modem purchase. There are universal modem adaptors and interfaces that might be suitable for a TS computer. These devices can be found in the back of electronic and computer trade magazines, and in some of the larger computer retail stores. With such an adaptor, most modems on the market would be made accessible, including the popular and inexpensive Volksmodem, manufactured by Anchor Automation, the parent company of Westridge Communications. The Volksmodem has a retail list price of a mere $70.

Most modems on the market are powered by an external AC step down transformer, like the Westridge 2050 modem. However, some like the modems from Byte-Back Co. are designed to use the computers internal power supply via the rear card connector. The Volksmodem on the other hand is portable, and is powered by a nine volt battery that is reported to last a full year under normal useage.

Both the Westridge and the Byte-Back modems (and the Volksmodem) have a baud rate of 300, which explains their budget pricing. Baud rate is the speed that a modem sends data over the telephone line. A 300 rate figures out to be approximately 30 characters per second. For about twice the money, there are modems that transmit and receive at 1,200 baud. That's four times faster than 300 baud. The 300 rate works just fine for most home applications, and won't put a strain on your pocket book either.

It is good to know that TS users haven't been left out in the cold when it comes to computer telecommunications, and a choice of modem equipment. Thanks to efforts from both Westridge and Byte-Back Co. Now a whole galaxy of special services and features are available at our fingertips. Almost any commercial data base or BBS can be accessed, because both modem companies have included parameters that are adjustable, such as full/half duplex, parity, and choice of stop bits and word lengths. If experimenting is your game, you may want to try adapting some other modem to your TS computer. Others have tried it, and have come up with some satisfactory results.
For further information write to:

Byte-Back Co.
Rt. 3, Box 147, Brodie Rd.
Leesville, S.C. 29070

Westridge Communications
6624 Valjean Ave.
Van Nuys, CA 91406

A REVIEW OF THE
MTERM II

By Tim Woods

SMART SOFTWARE FOR THE WESTRIDGE TS 2050 MODEM AND THE TIMEX/SINCLAIR 2068

I was really pleased with my Westridge TS 2050 Modem when it arrived the middle of last summer. Putting it through the paces was a breeze. I felt that the whole package including the MTERM/T Smart Terminal Software was really top-notch. The user manual was very clear and self-explanatory. A slick phrase came to my mind. One that had been printed in the sales brochures of the TS 2068..."nothing so smart was ever so simple." Oddly enough, it seemed to fit.

Take two. Enter the MTERM II, the optional Smart Terminal Software from Westridge Communications (licensed from Micro-Soft, Inc.) for the TS 2050 Modem and the TS 2068 Color Computer. For many months, reports had been circulating about the soon-to-arrive "Smart II" modem software, and how many wonerous feats it performs. I was finally able to obtain a copy from a local dealer for $30. Upon first glance, I noticed that it wasn't called "Smart II" after all, but MTERM II instead. Opening up the little stubby user manual (I usually make a habit of reading the manual first, it really does save time in the long run) a funny but distraught feeling came over me. Here was a program with perhaps ten times the complexity of the stock software that comes with the Westridge modem, and it is supplied with a manual that is only nine pages longer than the original user manual, with much smaller pages at that!

On page one of the user manual is an outline of the features incorporated in the MTERM II:

1. automatic computer answering
2. automatic computer dialing
3. auto-dial directory
4. 27k receive/send buffer
5. buffer can be erased, viewed, printed or transmitted
6. 10 Macro Keys, each hold up to 53 characters for auto-logon, codes, ect.
7. go in and out of the program, change settings, turn buffer on and off, without losing data.
8. command line, displaying status of functions and features.
9. a HEX or REM conversion routine.

So the features are all there, learning how to access and utilize them is a whole different story. Apparently, Westridge has intentionally (or unintentionally) omitted page after page of vital information, especially pertaining to up-loading and down-loading of data. In fact, complete volumes could be penned about the MTERM II! Essentially, all of the standard features of the original software are there, along with a host of new ones. There are a few more sub-menus too. Loading the cassette tape takes around 50 seconds (thats fast!). The program is almost 100% Machine Code.

After about a week of experimenting, and a good deal of "touch and go", I was able to execute about 3/4 of the program. Also, to my good fortune, I was given a sheet of instructions that were written by a Mr. Dave Clifford, 13910 Halldale Ave., Gardena, CA, 90249. Evidently, Mr. Clifford has done a lot of homework on the MTERM II, and has discovered most of the missing procedures. The functions that are noted on the sheet are 1. how to

exchange a BASIC program via the buffer transmitter, and 2. how to do a "page send". There are also some extra control codes that are mentioned. EDITOR NOTE: When we contacted Mr. Clifford by phone, he said that he would be more than happy to pass on this information to anyone who sends him a request and includes a business size self-addressed and stamped envelope. Since this review was written, he has also figured out the routine for writing text in REM statements, then uploading or downloading at the users convenience. Mr. Clifford also reported on a utility program that is available from Micro-Soft that can be merged with the MTERM II, and will allow the user to upload Machine Code and stored variables.

In conclusion, I don't feel this program is for everyone. It provokes some frustration. Most average users of the Westridge TS 2050 Modem would be just as happy using the software that came with their modem. However, if the added benefits of memory storage to assist you in loging-on to your favorite BBS, and uploading and downloading of data (like BASIC programs) interests you, then this software package is for you. But you will be spending some time with it. In the meatime, Westridge Communications should rewrite their user manual, and include several items that they forgot to explain. I'm sure it had to do with their hastiness in coming out with the MTERM II.

Actually, after awhile, and when several things had been worked out, I began to feel more comfortable with the MTERM II. I really like the "command line" feature at the bottom of the main menu. Among the reports it gives, is how many bits have been used in the buffer (a buffer by the way, is a kind of temporary memory). With all of the complexity of this program, there still is a small degree of user-friendliness tucked away in there.

SCREEN DISPLAY STORAGE AND MEMORY RELOCATE

By Dennis Jurries

EDITOR NOTE: The staff of Time Designs Magazine welcomes Dennis Jurries, who contributed several interesting features in this issue. Dennis is a mechanical engineer with interests in electronics and home computers. He founded the Clackamas County Timex Sinclair Users Group about three years ago, and is currently working at writing for various newsletters and computer magazines. Dennis is also working on an analog tracer for the TS 2068. The tracer will allow the user to trace a picture or drawing, and the image will appear on the screen and be saveable in the computer. Look for other features on advanced programming techniques in up-coming issues of Time Designs Magazine, from Dennis Jurries.

The following is a routine that will work on the TS 2068, and with address modifications, on the TS 1000. You can save screen displays, or use it to relocate a program in memory from one address to another. The program as it is written here, will allow three screen displays to be stored and recalled in approximately 0.04 seconds.

The screen display on the TS 2068 is located at address 16384 and takes up 6912 bytes of memory.

Machine code loader and MC

```
 5 CLEAR 44609
10 FOR i=44610 TO 44629
15 READ x: POKE i,x: NEXT i
20 DATA 33,0,64,17,86,174,24,6,
33,86,174,17,0,64,1,0,27,237,
176,201
```

RUN and DELETE 5,20

If you wish to allow space for more, the two 174's in line 20 will have to be reduced by 27 for each extra screen display, and the addresses in lines 5 and 10 will have to be reduced by 6912 for each extra screen. Be sure to check to see if you have enough memory to add the extra screens.

LOAD in or design your first screen display. Type RAND (single key) USR 44610 and press ENTER to store the first screen. POKE 44615, 201 for the second screen display set up.

LOAD in or design your second screen display. Press RAND USR 44610 and ENTER to store the second screen. To set up for the third screen display, type POKE 44615,228.

LOAD in or design your third screen display. Press RAND USR 44610 and ENTER to store the third screen. The USR addresses will change by 6912 for each extra screen display over the three set up here.

To recover your screen displays:

POKE 44620,174 for screen #1

POKE 44620,201 for screen #2

POKE 44620,228 for screen #3

and press RAND USR 44618

For any extra screens, change address 44618 to 6912 less than 44618 for each extra screen, and the same for address 44620. The value of the number poked into address 44620 changes by 27 for each screen, and will also do so for any extra screen displays.

To save your screen displays, press SAVE "name" CODE 44610,2075 6. If more than three screen displays are to be saved, then change the first number after the CODE to the new starting address, and add 6912 times the number of screens in excess of three to the second number.

OP-CODES for machine code

```
44610 LD HL,16384
44613 LD DE,44630
44616 JR 6
44618 LD HL,44630
44621 LD DE,16384
44624 LD BE,6912
44627 LDIR
44629 RET
```

address change?

Please notify us as soon as possible of an address change so that continuation of your subscription will go on without an interruption of service. Send us your name, subscriber ID number, and your new mailing address.

TS 2068 / SPECTRUM-WARES

If you were like most Timex/ Sinclair 2068 users, you probably wondered if there was going to be life after the departure of Timex from the computer market. Although the picture looked rather bleak, there was still a ray of hope. Sinclair Research in Great Britain was stronger than ever, and their 48k ZX Spectrum had taken the number one spot in total sales (in England). Software and hardware support are short of amazing for this computer. The Timex/Sinclair 2068 is basically a Spectrum with a few additions like a programmable three channel sound chip, joystick ports, and memory bank switching. What Timex engineers also slightly changed was the ROM operating system. For this reason, most Spectrum software programs will not run on a TS 2068.

Doug Dewey, one of the founders of the successful Triangle Sinclair User Group in Carrboro, North Carolina, first pioneered a way to make the Spectrum software (and hardware) compatible with the TS 2068. He solicited the aide of the Timex Corp., who had plans for a Spectrum "emulator", called the "Chameleon". Using the Timex plans for reference, Doug Dewey successfully constructed an emulator that plugged into the cartridge port of the TS 2068. Dewey's EMU-1 Spectrum Emulator sells for $60 (includes postage), and is basically a small bare circuit board with an EPROM that is programmed to imitate the Spectrum ROM operating system. For further information (and/or ordering), write to: Doug Dewey, 206 James St., Carrboro, N.C., 27510. We have contacted Mr. Dewey, and he is going to supply us with an EMU-1 for a review in this magazine, hopefully for our next issue. He also gave plans for a new board that he is developing that will allow a user to use both the Spectrum ROM and programmable EPROMS with a switch between the two systems.

Other enterprising individuals have also developed Spectrum ROM conversion kits for the TS 2068. Perhaps the most bare bones approach, is simply opening up the TS 2068 and directly swapping the TS 2068 ROM chip with a Spectrum ROM. Several suppliers carry the series three Spectrum ROMs, including: Pheonix Enterprises, Foote Software, E. McGhee, and the Long Island Sinclair Timex Group (Centerport, NY). Prices vary from $20 to $30. Another approach is Russell Electronic's "Romswitch", that is reviewed in this issue. There is also some construction plans for a small board that fits inside the TS 2068 and includes a switch to activate the Spectrum ROM. It is available in the form of a reprinted article from Sinclair/Timex Users Magazine. For information, send legal size S.A.S.E. to: SUM, c/o 3224 NW 30th Ave., Gainesville, FL, 32605.

Available now to TS 2068 users is a huge inventory of software titles (over 5,000 strong), that are from Great Britain, where programmers have been busy at work since 1982, when the first ZX Spectrum hit the streets. Most of the programs are quite superb. Everything rom very useful business programs, to visually exciting arcade games, and some tasty utility programs also. Not only can you order them direct by mail from overseas, but many U.S. TS retailers are stocking up on Spectrum titles. As far as hardware add-ons go, this is still being explored. There are many fine peripherals for the Spectrum such as the Sinclair Micro-Drives, 80 column printers, voice

boxes, and light pens. The question is just how many of these items will work directly with the TS 2068 (with Spectrum ROM), without modification. It should also be pointed out that a very small percentage of Spectrum software will not run on a modified TS 2068 for some underlying technical reasons. We will be discussing this topic further, along with a listing of compatible and non-compatible software, in future issues of Time Designs Magazine.

"TS 2068/Spectrum-Wares" will be a regular feature now in these pages. We feel that the TS 2068 has had a sort of "re-birth", and has returned back to its roots, with an operating system originally developed by its parent company... Sinclair. We will keep you update with software and hardware reviews, and any news of interest in this area.

ANT ATTACK

SOFTWARE REVIEW

By Tim Woods

I had heard of this program before the Timex Computer Corp. had gone bust. So when Quicksilva announced that they would not be producing this program for the TS 2068, I was greatly disappointed. Now that my 2068 is modified to run Spectrum software, like so many other owners have done, obtaining quality software for my computer is no problem. In fact Quicksilva has just come out with 18 Spectrum programs only previously available in Great Britain.

I must confess that arcade style games don't really do much for me, except that I am constantly exploring this type of program, to see how the art of computer graphics and animation has evolved to where it is today. One particular arcade game of note, that is not available for Sinclair computers, is ZAXXON. It has fantastic 3D graphics. Ant Attack is also a 3D game.

Not only are there instructions inside Ant Attack's standard cassette packaging, but also a short lavishly imaginative story. For any newcomer to Quicksilva's games, this is standard fanfare on all of their software. (who thinks up all of those names anyway?) The instructions themselves were rather brief. The controls are four lower row keys for movement, four "grenade" firing keys in the next higher row, and four other keys for 3D view scans. The game is not joystick compatible.

The game opens up with the hero at the front gate of a huge desolate ancient city. The hero can either be boy or girl, the user has to select (no chauvinism here!). He or she must rescue their opposite sex counterpart who is trapped inside the 3D city, which is similar to a maze. You must rescue the victim before time expires, and escape back through the city gate without getting "ate alive" by the ants. To aid you in your rescue, you are supplied with 20 grenades that you can throw down at the ants, after climbing (using "jump" key) up on one of the many structures. There is also a box in the lower right-hand corner that flashes when you are headed in the correct direction of the person to be rescued. Each person can withstand 20 ant-bites before they die. The score, time expired, grenades left, and how many bites sustained are constantly displayed.

The city maze is the same in each game that is played. It is a large city, but certain landmarks become quickly recognizable. The

person in distress is placed randomly in a different spot for each game. However, for the first game that is played, the victim is almost always placed right in plain view. It gradually gets more difficult. Sometimes the person is tucked away in some little nook that is barely visible. When the hero reaches the victim, the screen flashes the message "my hero, take me away from all of this!" I have found that you must stay right with the rescued person or your escape from the city will not work, and possibly you might get seperated.

Quicksilva calls the 3D buildings "Soft Solid" graphics, and has applied for a patent for this process. There are some interesting designs within the city. Pyramid and "sand castle" type construction is most predominate. The girl and boy are rather small figures, but have natural movement, especially when jumping. The ants are somewhat fat like a beetle, but are perhaps the most interesting part of the program. Their movement is sporadic and sometimes frenzied.

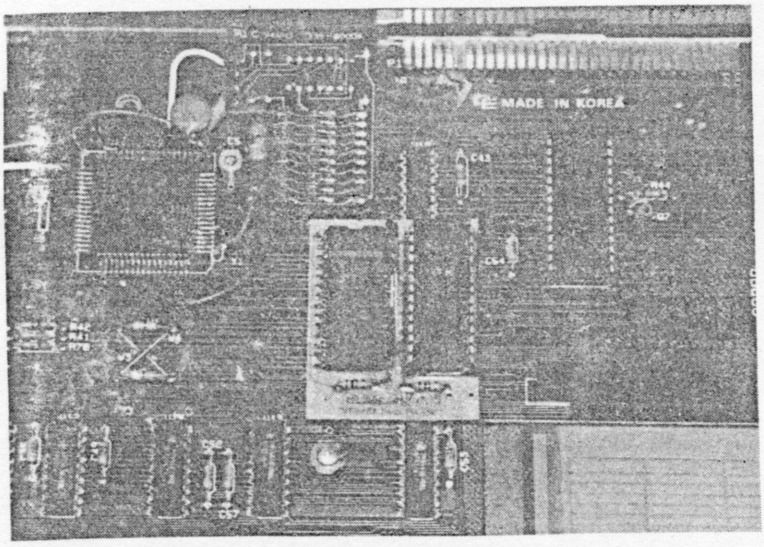
There are a couple of "bugs" in the game (besides the ants themselves). First, the screen can occaisonally scroll out of view of the hero, which can cause some problems seeing where you are going. To remedy this, you have to use the scanning keys to bring the hero back in sight. Secondly, the grenades that you throw down at the ants, are not accurate at all. You could throw one directly on an ant without destroying it, while at the same time an hit nearby could kill several of them in the same vicinity. One other bothersome feature, is the awkward controlling of the hero with the movement keys. It is quite difficult to master a smooth traveling hero, and takes some practice. A joystick feature would be ideal.

I must say that it was worth the long wait to obtain this interesting game program. While other computer games might hold my interest as far as playability for longer periods of time, this one intrigued me with its original concepts and remarkable graphics. I am especially fond of the sophisticated 3D buildings some of which have intricate tunnels, doorways, and stairsteps. The ants were quite a hit also. This Spectrum software has also given me an exceptional appetite to indulge in other Spectrum software.

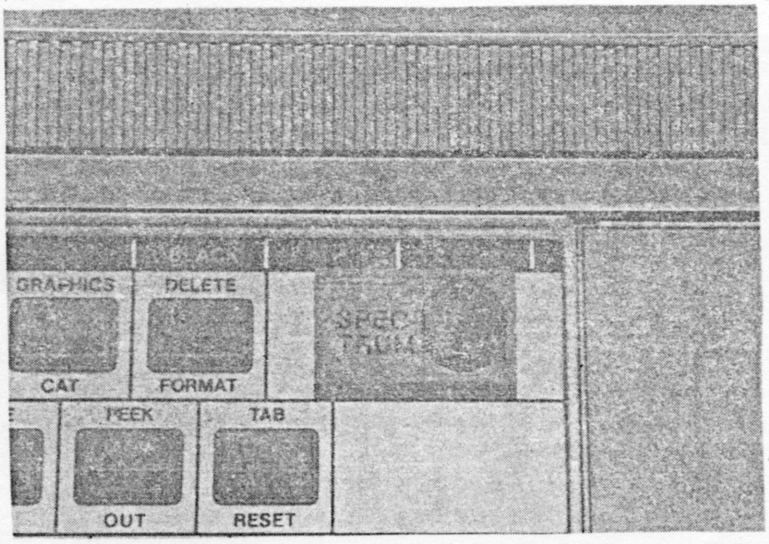
price:$19.95 (U.S.)
available from:Quicksilva, Inc., 426 West Nakoma, San Antonio, Texas, 78216.

RUSSELL ELECTRONICS "ROMSWITCH"

Most computer users, except for a select group of "do-it-yourselfers" and experimenters, would be horrified at the thought of opening up their computer and installing a small circuit board. Well the folks at Russell Electronics have almost totally eliminated the fears and risks involved in such an operation, by offering a kit that requires no soldering, no drilling, and no technical expertise. The "Romswitch" is simply a tiny circuit board that is inserted into the socket of the TS 2068 ROM chip that has been removed carefully, then inserted into the empty socket on the Romswitch board. Also, on the board is the Spectrum ROM (type three), and a magnetic reed switch assembly. With the Romswitch in place, the TS 2068 user can utilize almost any software written for the 48k ZX Spectrum.



Proper placement of the Romswitch board. Note: location is upper left of the cartridge port.



The stick-on magnet switch reads either Spectrum or TS 2068.

The beauty of the Romswitch is the capability of switching between both the TS 2068 and Spectrum ROM operating systems, by sliding the large magnet "switch" assembly that is affixed to the TS 2068s case by means of a pressure sensitive adhesive tape. This is where the Romswitch received its name. Once the blue magnetic slider is positioned properly next to the 0 key and directly above the previously installed board, you are in business.

Russell Electronics has documented each assembly step quite thoroughly in their instruction packet. Almost any question that one might have, has been answered. The completeness of their instructions is a rare "plus", and a feature that is rarely included in most kits that we have seen for TS related products. There are very few risks involved here. The biggest perhaps is static electricity discharge or a broken-off chip pin. Again we recommend following the excellent instructions provided, and use patience and common sense. This will more than gurantee a perfect installation. With our sample Romswitch kit, we installed it in less than fifteen minutes in our TS 2068.

When using the Romswitch, it is necessary to turn the power off when switching from the Timex to the Spectrum ROM (or vice versa), otherwise, the computer will crash. Although this requires an additional step, it really isn't a problem. You will know that you are in the Spectrum mode both because the switch will tell you, and as the computer initializes, only the Sinclair copyright report will appear on the screen. Programming in BASIC is exactly the same in this mode, but some of the keyboard characters have been changed.

We feel that the Russell Electronics Romswitch is a valuable addition to the TS 2068, and extraordinarily easy to install. Although at first we thought that the price of $54.95 (includes postage) was somewhat high, after obtaining some excellent Spectrum programs and using them on our Timex, we began to reconsider our first impressions. The Romswitch is a big improvement over direct replacement of a Spectrum ROM in a TS 2068, and so far to date, has run every program that we have loaded, and has never failed. We recommend the Romswitch without reservation. Good work Russell Electronics!

For more information: Russell Electronics, RD 1, Box 539, Centre Hall, PA, 16828

COMPUTER PROJECT NO. 2

MAKE A STATIC DISCHARGE BRACELET

The computer chip manufacturing industry has spent millions in building specially designed facilities. They are 99.9% free from common static electricity, which can destroy certain IC chips that are static sensitive, in an Such a facility might have equipment that removes static from the environment, specially treated floor and work services, and the employees wear certain garments and shoes. While an electronic hobbyist connot afford such state of the art apparatus in his own home workshop, the hazards of static electricity discharge are every bit as real.

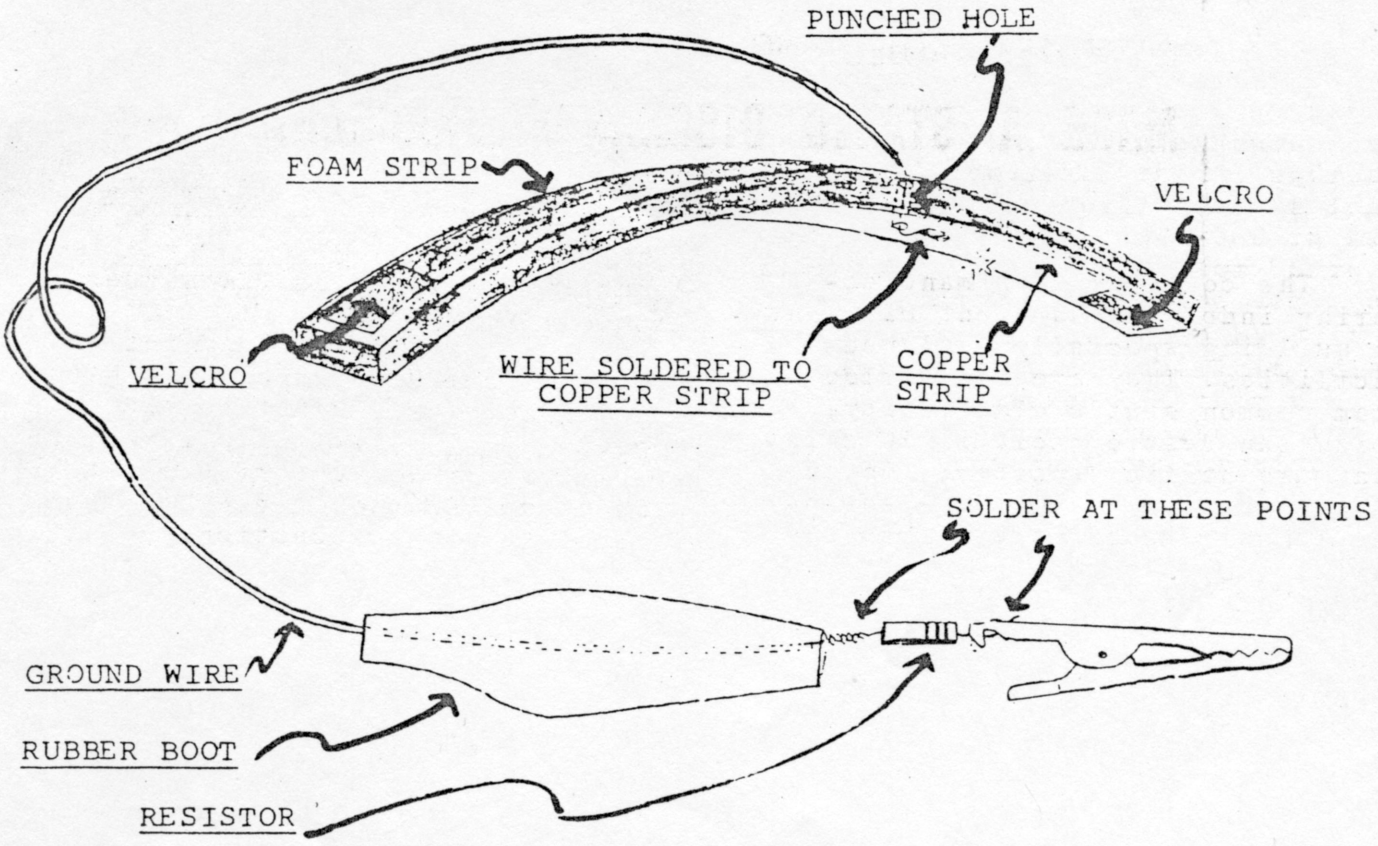
Zapped computer chips such as microprocessors and logic chips, ROM, EPROMs, CMOS and MOS chips are not much fun, and certainly quite costly to replace. Although seasoned experimenters may rarely come across many problems in this area, special handling procedures need to be observed. This usually entails one or more of the following:

1. Carefully open up the computer's case, and use minimal handling around the circuit board, chips, and other internal parts. Power should always be off.
2. Right before removing or installing a computer chip, discharge the static electricity that has built up in your body by touching a grounded object (i.e. drain pipes, center screw of an electrical outlet, ect.).
3. Store all static sensitive chips in the special anti-static foam that they come packed in.
4. Take into consideration several situations that are more prone to static, such as low humidity (dry weather), lightning storms, body friction on synthetic materials, and electric forced fan heaters and clothes dryers.

With a good deal of interest in Spectrum ROM swapping with the Timex/Sinclair 2068, and EPROM packages, "do it yourself" computer servicing is on the rise. Most Spectrum ROM conversion kits come complete with precautionary instructions to use in avoiding static electricity damage, however, this does not necessarily remove the risks.

There is a device that many professional computer service technicians use to get around the problem of static safely. It is called a "static discharge bracelet". The bracelet simply is a metal strip that is strapped around the wrist, with a long wire that is soldered to the band at one end, and attached to gound by means of an alligator clip at the other end. The person wearing the bracelet is securely grounded, rendering any static discharge harmless. You can make your own bracelet at home for a few dollars. All of the parts are easily obtained.

1. Strip of foam-type weatherstripping, 3/4" to 1" wide, and long enough to wrap comfortably around your wrist with an extra inch to spare.
2. 3/4" wide strip of copper foil, approx. the same lenghth as the foam strip without the extra inch. (The copper foil can be found at hobby/craft stores or large plumbing shops.)
3. Two Velcro strips
4. 48" or longer piece of insulated electrical wire.



5. One 1/4 watt mega-ohm resistor.
6. One medium-size alligator clip with a rubber boot.
7. A piece of vynl electrical tape.

Peel off the paper backing of the foam weatherstrip and attach to the copper foil strip. Attach the Velcro strips to each end of the bracelet (either glue or sew a stitch), observe the illustration for proper placement. Punch a small hole thru the foam and copper strips and insert one end of the wire with 1/4" of insulation stripped from the end. Solder the wire to the copper foil, and cover with a small piece of electrical tape, so that the solder joint won't scratch a bare arm (it also acts as a strain relief). On the other end of the wire, strip 1/4" of insulation and slip the boot of the alligator clip over the wire end. Solder the mega-ohm resistor to the wire, followed by soldering on the alligator clip itself. Slip the boot down over the clip, and inspect all the solder connections or places where there might be bare wire showing, and cover with more electrical tape if necessary.

When using your static discharge bracelet, strap it firmly to your wrist, with the copper foil contacting securely against your skin. Run the long piece of wire to a known ground and attach with the alligator clip. Now you can safely handle computer-related parts and chips as long as your bracelet is properly working for you. Wear your bracelet at all times when you are engaged in such activities...it could save you time and money in the long run.

Special Note: Use caution when cutting or handling the thin copper foil strip. The edges are extremely sharp and could cut you. Make sure all sharp edges of the foil are pointing away from your arm, or removed with a file.

BREAKING AND SAVING 2068 PROGRAMS

By Dennis Jurries

EASILY MAKE BACK UP COPIES OF EXPENSIVE COMMERCIAL SOFTWARE TAPES WITH THIS METHOD BY DENNIS JURRIES. AT THE SAME TIME, LEARN HOW PROFESSIONAL PROGRAMMERS STRUCTURE THEIR MACHINE CODE PROGRAMS.

Most programs that you can purchase for the TS 2068 when loaded start running, and if you try breaking into them, they dump, lock up the computer, or will not accept the break command. These programs usually consist of a least three programs in one. The first part consists of a simple loader that tells the computer to load the SCREEN$, and to load the machine code program, and may have some BASIC program that intermixes with the machine code program. The first part may be hidden when you break into it by having the BOARDER, PAPER, and INK colors all the same. Change the paper color if this is so, and relist it. You may have to MERGE a line, such as "1 STOP". The MERGE command disengages the auto-start function and thus any command that would normally prevent you from breaking into the program.

The following procedure works in all cases.

MC -machine code program name.
BASIC -basic program name.
SCREEN -screen string program name.

1. LOAD the program until the screen display is displayed, then BREAK and LIST. If the program dumps or locks up, then MERGE a line and LIST. This listing will give you the starting address of the machine code (found in the line RAND USR #), the name of the MC, and SCREEN$ programs.

2. LOAD the MC program (LOAD "MC" CODE).

3. PEEK the MC program looking for the length. This can be done by looking in the MC until you find a long group of 0s (say 96).

4. SAVE "BASIC"LINE 1
   SAVE "SCREEN"SCREEN$
   SAVE "MC"CODE #1,#2
   #1 is the starting address from RAND USR. #2 is the length of the MC routine, determined by subtracting the starting address from the ending address found when you peeked the MC and found the start of the 0s, or by using the top of memory 65535 (ie. say start address from RAND USR 420 00: 65535-42000=23535 then SAVE "MC"CODE 42000, 23535).

5. After completing the above, and VERIFYING each step, except SCREEN$, press NEW and LOAD the program copy that you have just made, and try it out.

NOTE: You may want to delete any of the statements that would not allow you to break the original program, before you start saving the program. Some of these commands are: ON ERR and POKE 23613,87. DELETE them if you want to.

GOOD LUCK!!!

PROGRAMS

PIE CHART

For the TS 2068

By Bill Gunter
Sacramento, CA

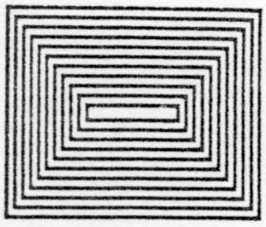
The author states that "I think it would be nice if it were possible to somehow label each section of the pie chart," Does anyone have any ideas?

```
  1 REM          **************
  2 REM          * PIE CHART *
  3 REM          * by BILLY  *
  4 REM          **************
  5 DIM n(15)
  6 GO SUB 200
  7 BORDER 6: PAPER 6: INK 0: C
LS
 10 LET x=180: LET y=87: LET z=
50
 15 FOR i=3 TO 18: PAPER 1: PRI
NT AT i,14;"                  ": NE
XT i
 17 INK 7
 20 CIRCLE x,y,z
 30 PLOT x,y: DRAW z,0
 35 PAPER 6: INK 0
 40 PRINT AT 0,0;"enter number
of items"
 50 INPUT t
 60 PRINT AT 0,0;"enter value e
ach item- "
 65 LET s=0
 70 FOR i=1 TO t
 80 INPUT n(i)
 82 PRINT AT 0,24;n(i);"    "
 85 LET s=s+n(i)
 90 NEXT i
 92 PRINT AT 0,0;"        BILLY'
S PIE CHART          "
 95 LET j=0
100 FOR i=1 TO t
110 LET d=s/(n(i)+j)
115 LET j=j+n(i)
120 LET d=(2*PI)/d
130 LET a=COS d*z: LET b=SIN d*
z
135 INK 7
140 PLOT x,y: DRAW a,b
145 INK 0
150 PRINT AT i+3,0;i
151 PRINT AT i+3,3;n(i)
152 PRINT AT 2,0;"#  value    %
"
153 PRINT AT i+3,11;INT ((n(i)/
s)*100)
160 NEXT i
165 PRINT AT 21,5;"TO CONTINUE
PRESS ""c"""
170 IF INKEY$="c" THEN GO TO 7
180 GO TO 170
200 BORDER 1: PAPER 1: INK 7
205 CLS
210 PRINT AT 10,11;"PIE CHART"
220 PRINT AT 11,14;"by"
230 PRINT AT 12,12;"BILLY"
240 PRINT AT 21,25;"7/18/84"
250 PAUSE 100: CLS : RETURN
```

For the TS 1000/ZX81

BOXES

By Stephen Brothers
Aurora, CO



```
 10 REM "BOXES"
 20 REM
 30 REM BY, STEPHEN BROTHERS
 40 SLOW
 50 LET G=0
 60 LET J=43
 70 LET H=63
 80 FOR F=G TO H
 90 PLOT F,J
100 PLOT F,G
110 NEXT F
120 FOR K=G TO J
130 PLOT H,K
140 PLOT G,K
150 NEXT K
160 LET J=J-2
170 IF J=21 THEN STOP
180 LET H=H-2
190 LET G=G+2
200 GOTO 80
```

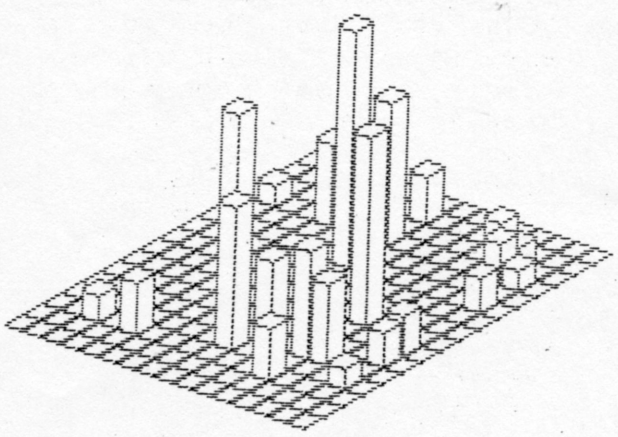
SOFTWARE REVIEWS

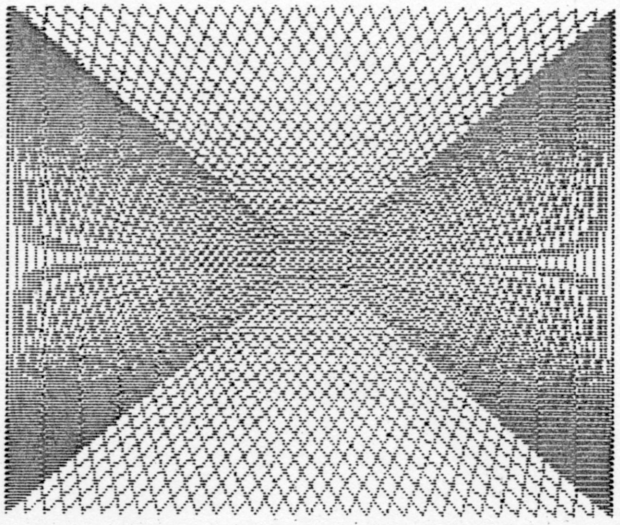
THE GREAT GAME AND GRAPHICS SHOW

By Tom Judd

JRC Software has come up with a good idea. Take 17 of your programs and put them all on one tape, and sell your tape to the public. They offer two program tapes in this format, one for the TS 1000/ ZX81 called the "Supertape", which contains 42 seperate programs! (I will review the "Supertape" in the March/April issue of T.D.M.) And then there is the "Great Games and Graphics Show", with the 17 programs for the TS 2068. An advantage to using the TS 2068 with a software package like this one, is that all of the programs can be loaded in at one time, and then called up by the main menu. All of the games and graphic-type things are on side one of the tape, and on the other side is an unusual text editor/word processor called the EASY EDITOR". Here is a brief description/review of each one of the short programs on side one of the "Great Games and Graphics Show":

1. Oscilloscope: Very neat! Like a laser light show, with rotating graphics.
2. Stary Sound: Planetarium style stars display, with good sound effect.
3. 3-D City: Good 3-D graphics of tower-like buildings. See the example provided.
4. Snowflakes: Interesting patterns.
5. Flashing Display: O.K., the flashing characters gave me a headache though.
6. Polygons: Back to the title screen. Where are the polygons?
7. Touch Type: I like this one, for people like me who are basic "hunt and peckers". This is one of the better typing/learning games I've seen. Has different levels.
8. Trash Pack (Animation Demo):





JRC Software
P.O. Box 448
Scottsburg, IN
47170

Simulated Pacman characters without the Pacman game.

9. Lunar Lander Game: Slightly better than standard game, as far as graphics. Crash report flashes too fast.
10. Etchsketch Pad: The old standard for kids. Good use of colors, and has some added features like- saving to tape, inverse, ect.
11. Dodge-em Game: Genuine fun game! Would have been nice to have a running score, but does keep track of score at the end, with previous high scores. Simple... uses only one key, but challenging.
12. 3-D Graph: Three graph planes stacked. Fast and simple.
13. 128 Line Graphics: Also fast, and slightly interesting.
14. Big Star: The old "Spiral-Graph" type graphics.
15. Sine Wave Curves: 3 Sine waves, each with a shadow wave, plus a C major Chord for music at the end.
16. Color Mode 2: Weird, colorful pattern. Interesting.

The Easy Editor on side two is written entirely in BASIC. Text is entered in line numbers and REM statements (usually one statement for each paragraph). The editing of text is done by using the cursor arrows and DELETE. You can also have "formated" text. Text files can either be printed or saved in D$. The feature I like the best, is the choice of bold printing. It looks great! While Easy Editor is simple, it is not the definition of a fantastic text editor. You might call it the "poor mans word processor".

I liked the "Great Games and Graphics" package, and it is a real bargain for $24.95. There could have been some better documentation and packaging, but these are just minor complaints. Highly recommended.

Compass Compiler Assembler Package

By Dennis Jurries

After trying to use the COMPASS Compiler for three days, and becoming very frustrated, I decided to give up. This compiler is the best I have seen for the Timex computer, but it still has a lot of shortcomings. (Editor Note: as far as we know, this is the only integer Basic compiler that is presently available for the TS 2068) I believe that it can only be used on less than 25% of your BASIC programs. It cannot do curved graphics because it will not compile trig functions. Although the instructions say that the program will compile PAUSE statements, I found that the program seemed to lock-up in a loop when told to compile PAUSE. The following are BASIC commands that cannot be compiled: SQR, SIN, COS, TAN, INT, and ABS. Also, RND is not totally acceptable in the only form allowed in BASIC for the compiler. The compiler program appears to have been offered for sale before it was completed.

The assembler portion of the program, although not on the level of the Zeus Assembler (available from Softsync), it is very well written and has several features that the Zeus does not have. It allows for the addition of explanations along side of the preassembled listing of the op-codes. Also, multiple op-code statements on each line are allowed.

This Compass compiler/assembler package will be a very useful tool when the above commands are incorporated into it.

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By Dennis Jurries

STRAITS OF HORMUZ

Personally, I don't usually enjoy game programs other than to take them apart to find programming tips. This game program falls into the thinking type category, rather than the skill type program. Straits Of Hormuz is very interesting and challenging, and as the instructions state...frustrating.

The object is to find and box-in as many mines as you can. As you move across the straits you will hear beeps in each column that there are mines. You will also hear beeps as you go up the straits. Several beeps in each row or column indicates that there are several mines. Once you have boxed in the mines, you exit the straits and enter a more difficult area. Torpedoes will be fired across the straits, with more torpedoes in the higher levels. The torpedoes may destroy you or your boxes which you will have to build.

I could not get very far. In fact, the creator of the program informed me that level five is as far as he has made it. If you like thinking type games, then this one is for you.

EXECUTIVE CLUE

This program is for those of you that have played the board game, and enjoyed it. Executive Clue plays like the board game, in that you are given a list of the potential murderers, a list of the murder weapons, and a picture of the rooms of the house where the murder took place. You have to remember the names of the weapons and the names of the potential murderers. By guessing and evaluating, you try to arrive at: who did it, where, and with what? This is a stimulating and enjoyable program.

info

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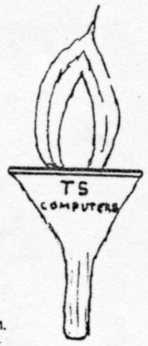

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